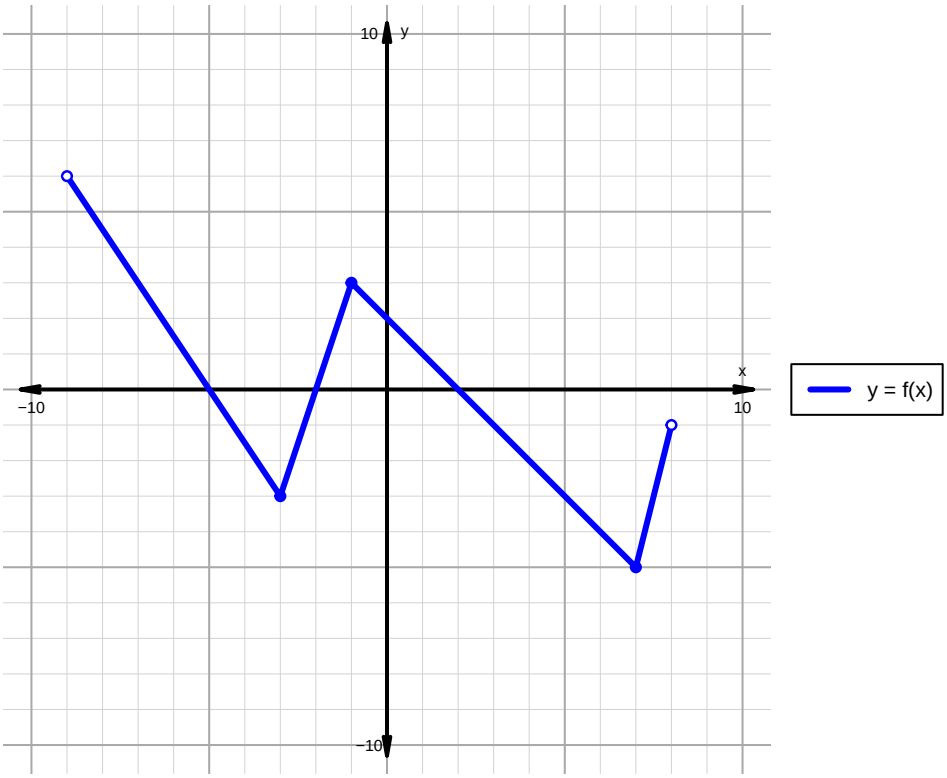
Name: Date:

Intervals, Transformations, and Slope Solution (version 115)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-9,-5)\cup(-2,2)$
Negative	$(-5,-2)\cup(2,8)$
Increasing	$(-3,-1)\cup(7,8)$
Decreasing	$(-9,-3)\cup(-1,7)$
Domain	$(-9,8)$
Range	$(-5,6)$

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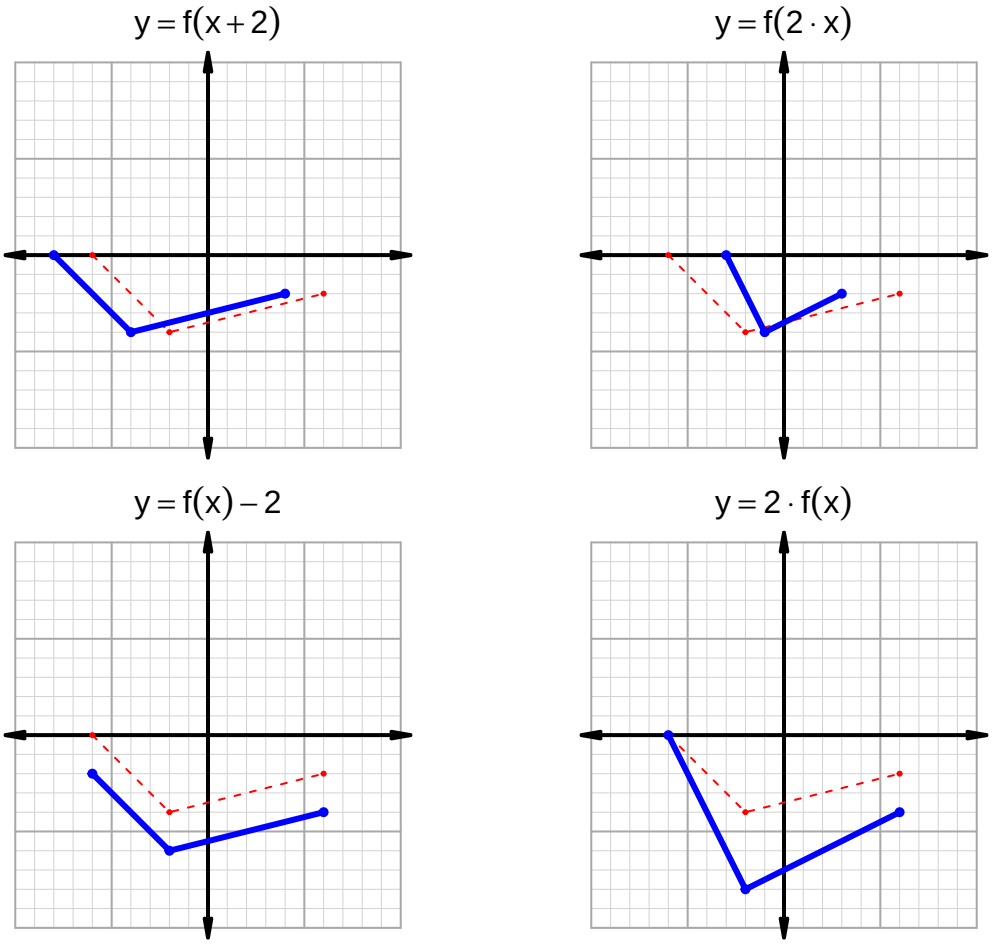
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 43$ and $x_2 = 71$. Express your answer as a reduced fraction.

x	$g(x)$
43	55
55	71
67	43
71	67

$\frac{f(71)-f(43)}{71-43} = \frac{67-55}{71-43} = \frac{12}{28}$

The greatest common factor of 12 and 28 is 4. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{3}{7}$$